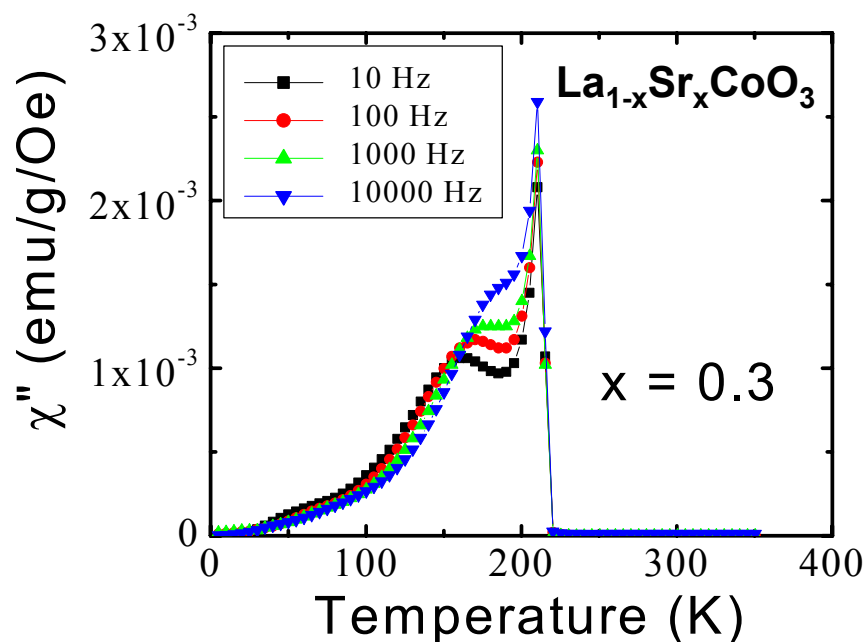


Acquisition of a Measurement System for Research and Education in Magnetic Heterostructures: DMR-0113917

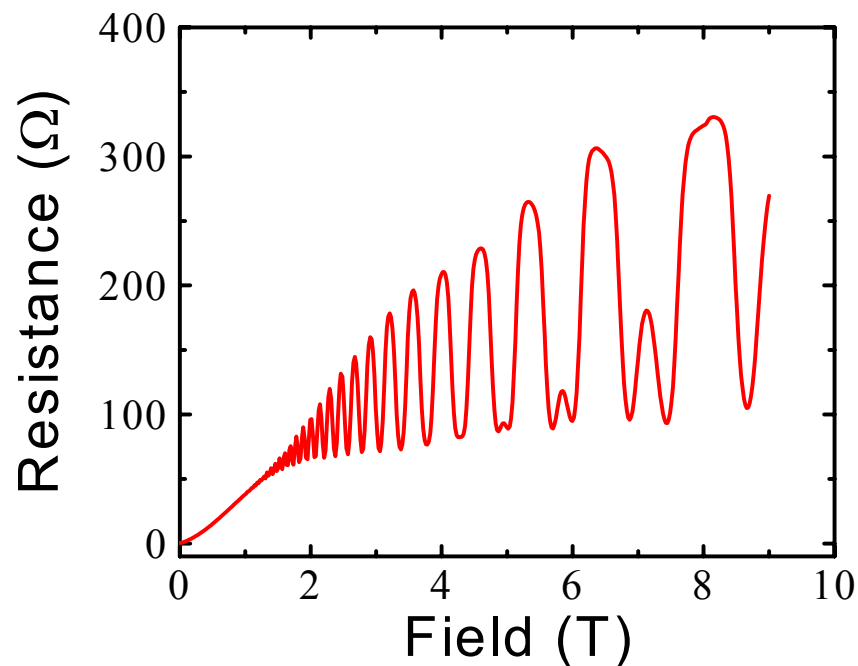
Novel Magnetic Materials

Data shown are the imaginary part of the AC susceptibility for a sample of $\text{La}_{1-x}\text{Sr}_x\text{CoO}_3$. At this concentration, the AC susceptibility shows signatures of both ferromagnetism (the sharp peak), and spin-glass behavior (the broad shoulder). Novel materials are a major component of research using the new system.



Spintronics

Data shown are Shubnikov-deHaas oscillations in an $\text{InAs}/\text{Ga}_{0.9}\text{Al}_{0.1}\text{Sb}$ quantum well. This sample is being studied as part of a study of electronic systems with large spin-orbit coupling for spintronics applications.



Acquisition of a Measurement System for Research and Education in Magnetic Heterostructures: DMR-0113917

Quantum Design Physical Property Measurement System - installed in June 2002

Capabilities: 9 T magnetic field, 350 mK - 400 K operation, DC and AC resistivity, DC and AC susceptibility, sample rotation

- Supporting collaborations among 8 faculty in physics, chemical engineering, materials science, and electrical engineering
- Collaborations with other institutions:
Harvey Mudd College (magnetic multilayers)
Macalester College (spintronics) - data shown on previous viewgraph are from this experiment
NVE Inc. (spintronics)
- Six student users in first month, including undergraduates

Jing Wu - graduate student in Chemical Engineering and Materials Science - loading a sample for susceptibility measurements

